



environmental consultants, inc.

M/023/003

www.jbrenv.com

8160 S. Highland Drive • Sandy, Utah 84093 • [P] 801.943.4144 • [F] 801.942.1852

January 24, 2006

Ms. Susan M. White
Minerals Regulatory Program Coordinator
Utah Division of Oil Gas and Mining
P.O. Box 145801
Salt Lake City, Utah 84114-5801

RE: Response to Division Comments on Second Review of Brush Resources Inc.'s NOI
Amendment for Topaz Mine, Juab County, Utah; M/023/003

Dear Ms. White:

On behalf of Brush Resources Inc. (BRI), thank you for your letter of November 18 and the accompanying comments. Attached to this letter are two copies of BRI's response to the Division's comments along with two copies of changed MRP text pages, and a new illustration showing the mine camp detail. We have made minor modifications to the explanations for Plates 5 A&B, 11 A&B, and 12 to aid in responding to the Division's questions; however, revisions remain to be made on the CAD files before the revised maps can be printed. We will provide you with copies of these modified maps by the end of this week.

We look forward to discussing the Division's comments and our responses at our meeting on February 2.

Sincerely,

Robert J. Bayer, PG
Managing Principal

Attachments

Copies: Mr. Alex Boulton, BRI w/ attachments
Mr. John Wagner, BRI w/ attachments

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**COMMENT RESPONSE SUMMARY
DOGM LETTER OF NOVEMBER 17, 2005**

R647-4-104 – Filing Requirements and Review Procedures

Included with this submittal is a page print showing the changes made to Table 5.1.2. As these pages show, the entire original table was replaced with the current version of the table. We are not aware of any other unmarked text changes.

R647-4-105 – Maps, Drawings, & Photographs

A surface facilities map for the camp area at a scale of 1" = 60' has been prepared and is attached for the Division's review and approval.

The mine camp facilities are generally described in section 4.5. Sufficient descriptive detail to enable an estimate of the cost of demolition for these facilities will be included in section 9.3 of the surety section of the amended MRP.

The explanation for Plates 5A and 5B have been changed to "Phase I Bonding Period;" Phase I and the bonding period are one in the same.

R647-4-106 Operation Plan

BRI intends to include soil texture and electrical conductivity in its soil test procedures. Although BRI will not make the soil testing plan part of the MRP, the company does look forward to conferring with the Division as the plan is developed and results are obtained.

R647-4-107 Operation Practices

Section 5.7 is part of section 5.0, which is entitled "Proposed Mine Operations." The statement referring to repair of "minor erosions" refers to those that occur during mining operations, as the result of dump construction-related activities. The most notorious of these in the past have been small gullies that result from unintended release of water build-up behind berms at the outer top edges of dumps. In the past water has ponded in low spots behind the berms, broken through the berms, and caused rapid erosion and gully formation. It is possible that similar water buildups could occur during future dump construction and before final regrading of the dump surfaces has occurred. If this occurs, the gullies will be repaired as part of BRI's standard operating practices. Dump-top berms are no longer part of BRI's reclamation plan. Recontouring of dump surfaces is expected to eliminate the risk of most such erosional events following reclamation.

R647-4-110 – Reclamation Plan

Plates 11 A and B are entitled "Post-Mining Features." The topography shown on these maps depicts BRI's current estimate of the topography that will exist at the end of mine

life. The purpose of showing the Juab County Roads on these maps is to provide all currently available information on current county road locations and currently planned road re-locations. Those roads that are depicted as being relocated (dual dashed lines) are roads that will be relocated as part of the Phase I LMU development. The roads depicted with dual solid lines are currently established Juab County roads. Those that cross areas to be mined in the future will be closed or relocated, as determined jointly by Juab County and BRI. The explanations on these plates have been modified to more clearly reflect the foregoing explanation.

Plans for reclamation of the water well, pond and water pipeline have been added to section 7.2, Facilities Demolition and Disposal of the MRP. BRI will determine the cost of closure and reclamation of the well, pond and water pipeline and include that cost in its reclamation cost estimate when section 9.0 of the MRP has been prepared. The well is located on state-owned land managed by SITLA; BRI has a surface use lease for this parcel. The well itself is an improvement to that property and per the lease is part of that property. BRI can only plug and abandon the well and restore the surface around the wellhead with the approval of SITLA. The pipeline is located on BLM-managed public land. BLM may wish to retain use of the pipeline after BRI ceases using it. In the event that either SITLA or BLM wish to retain the well or pipeline after BRI no longer uses it, BRI will provide necessary documentation to the Division, amend its MRP and reclamation cost estimate and notify the Division of a non-mining use for these facilities.

R647-4-111 – Reclamation Practices

The landfill will be closed by covering it with five feet of rhyolite waste rock. Section 7.4.3 has been revised to be consistent with section 7.11.2.

All dumps and pit backfills margins will be rounded when their final configuration is reached. Pit backfill slope margins will rounded only if upon final reclamation the pits are not entirely backfilled.

BRI does not agree with the Division's suggested ripping depth. BRI's experience at the mine over the last nearly 20 years has demonstrated that the 18-inch ripping depth is appropriate. BRI's scarifier/ripper has 20-inch teeth. Given the low precipitation in the mine area, the shallower rip depth effectively relieves compaction without causing excessive soil drainage.

Table 5.6.1 lists the correct value for the anticipated soil salvage volume during Phase I. The correct volume, 48,105 has replaced the incorrect value previously shown in section 7.8. Of course, BRI hopes that the Division understands that estimating salvageable soil volumes is likely to be estimable to perhaps plus or minus 5%. The difference between the volume estimates referenced in the Division's comment is 0.05% and not meaningful.

R-647-4-112 - Variance

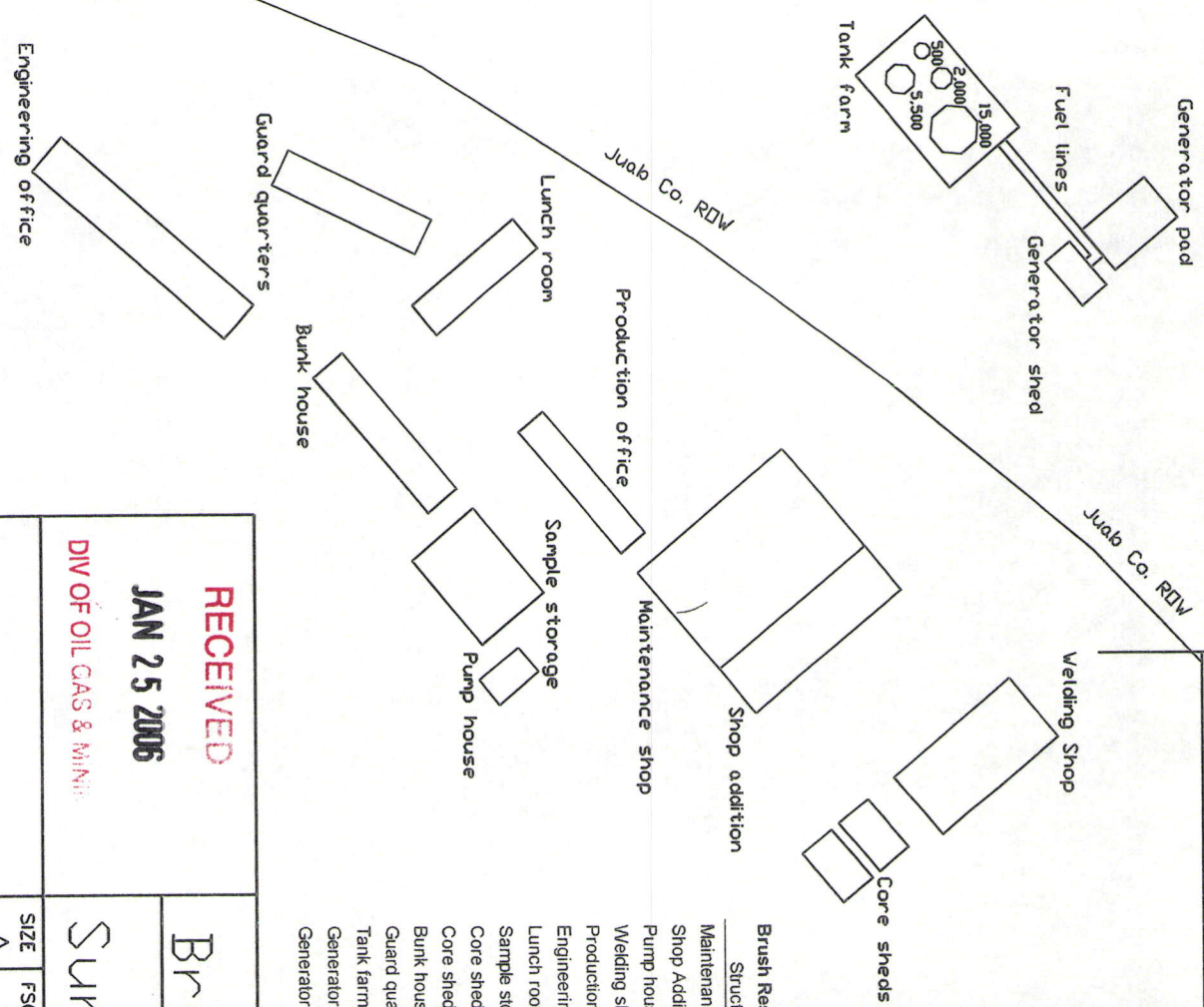
Regarding questions about Plate 12, BRI offers the following clarifications:

- The tan/orange-colored areas were removed from reclamation liability by variance when the original MRP was approved in 1988. These variances covered pit slopes, dump outcrops, pit revegetation, and dump revegetation (both surfaces and outcrops). There are no outstanding reclamation liabilities for these features and the existing bond does not cover any of these areas.
- The green-colored areas include pits, dumps, and backfills that were either reclaimed and released from surety or granted variances from reclamation between 1988 and 2000. Variances from reclamation were granted for all pit highwall regrading and revegetation, pit floor revegetation, and dump outcrops. The Roadside, Rainbow, and Blue Chalk dump surfaces were released; the Division recognized that continued efforts to achieve a vegetation cover of 70 percent in these areas through re-seeding and/or topsoil treatments would not be successful and that allowing vegetation to re-establish itself in these areas by volunteer means was the more reasonable approach.
- Another way to consider the status of past variances and reclamation releases is to examine the areas covered by the current reclamation surety. Any disturbed areas not currently covered by surety have no remaining requirement for reclamation attached to them. Therefore it is irrelevant whether these disturbed areas now have this status through past variances from reclamation and surety requirements or release of surety.
- Minor clarifying changes have also been made to the explanation on Plate 12.

The Division's records will verify the foregoing information.

Regarding the revegetation standard, BRI requests that the Division reconsider its decision on the requested variance and modified approach to measuring reclamation success. BRI and the Division have over 20 years of experience in reclamation at the mine. BRI's annual reports have been summarized in the MRP and this information combined with the Division's records provides documentation of these past efforts. Unlike most other non-coal mines in the state, the Topaz beryllium operation has been in continuous operation under DOGM regulatory authority since enactment of the Utah Mined Land Reclamation Act of 1975 and the promulgation of the implementing rules. There is certainly no other mine of the size and longevity of the Brush mine that is located in a part of the state with such low rainfall as occurs in the mine area. BRI also believes that the Division's past practices with regard to management of revegetation requirements at other mines do not represent a precedent that should be applied at the Brush mine. Instead, BRI believes that Rule R647-4-111.13.12 is entirely applicable in the manner that BRI has proposed. Past efforts that were diligently carried out and overseen by the Division have provided the Division with ample opportunity to assess the practical limits of revegetation at this mine site.

REVISIONS			
ZONE	REV	DESCRIPTION	DATE
			APPROVED



Brush Resources Mine - Camp Facilities as of 2005

Structure	Type	Area SqFt	Height	Foundation	Remarks
Maintenance shop	Metal	2400		16 Concrete pad	Partitioned inside
Shop Addition	Frame & tin	1078		14 Concrete pad	Partitioned / Bay area
Pump house	Frame	160		8 Concrete pad	Finished inside
Welding shop	Metal	1152		10 Concrete pad	Open inside
Production office	Mobile	500		8 Blocks	Light-duty trailer
Engineering office	Mobile	1120		8 Blocks	Modular trailer
Lunch room	Mobile	504		8 Blocks	Light-duty trailer
Sample storage	Metal	880		10 Concrete pad	Open inside
Core shed #1	Frame & tin	240		8 Blocks	Minimum construction
Core shed #2	Frame & tin	240		8 Blocks	Minimum construction
Bunk house	Mobile	666		8 Blocks	Light-duty trailer
Guard quarters	Mobile	600		8 Blocks	Light-duty trailer
Tank farm	Open air	1315		0.5 Concrete pad	Perimeter containment
Generator shed	Frame	160		8 Concrete pad	Finished inside
Generator pad	Open air	419		0.5 Concrete pad	Perimeter curb

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Brush Resources, Inc.
 Surface Facilities Map

SIZE	FSCM NO.	DWG NO.	REV
A		Acad\...\Camp05	
SCALE 720		1"=60'	SHEET 1 of 1

methods and techniques either from its past experience or on-going testing and assessment of new or alternate reclamation methods.

7.1 Post-Mining Land Use

The post-mining land use is currently intended to be for wildlife habitat and, perhaps, livestock grazing. This post-mining land use is also proposed under this revised MRP. Given the exceptionally long anticipated life of the mine, alternate post-mining land uses may be considered in the future. In that event, a proposal for an amendment or revision to the MRP will be submitted to the Division for approval. Meanwhile, this reclamation plan is intended to meet the needs of the currently proposed post-mining land use.

7.2 Facilities Demolition & Disposal

Existing ancillary site facilities have been described in section 4.5. These facilities include the existing mine camps and roads, as well as the on-site sanitary landfill, described in section 4.6. The very long expected mine life suggests that maintenance alone may not be sufficient to ensure that the necessary support facilities for the mine can be sustained. In some cases the facilities will need to be replaced with new ones. It is currently assumed that any such replacement facilities will have the same function and configuration as the current facilities and that no significant changes to their demolition and disposal would be required. In the event that increased support facilities are required at some future time, necessary revisions to the MRP would be made by way of a plan amendment or revision, as appropriate.

Salvageable buildings, tanks, electrical generating equipment, communications systems and other stationary equipment, and mobile equipment will be sold for salvage or reuse. Concrete building foundations will be demolished and disposed of in the on-site landfill, which is approved for disposal of demolition and construction debris. Portable buildings (e.g., office trailers) that cannot be salvaged will be demolished on site and disposed of in the on site landfill. Prior to removal from the site for salvage or re-use, the contents of all tanks will either be consumed or disposed of properly. Electrical generating equipment, communications equipment (e.g., repeaters), other stationary equipment, and mobile equipment will be sold for reuse or for scrap. Under no circumstances will

these types of equipment or related parts or components (e.g., tires) be disposed of in the on-site landfill or elsewhere on the mine property.

BRI operates a water supply well, water supply pipeline and dust-control-water storage pond. The well is located on state-owned land managed by SITLA; BRI has a surface use lease for this parcel. The well itself is an improvement to that property and per the lease is part of that property. BRI can only plug and abandon the well and restore the surface around the wellhead with the approval of SITLA. The pipeline is located on BLM-managed public land. BLM may wish to retain use of the pipeline after BRI ceases using it. In the event that either SITLA or BLM wish to retain the well or pipeline after BRI no longer uses it, BRI will provide necessary documentation to the Division, amend its MRP and reclamation cost estimate and notify the Division of a non-mining use for these facilities. If these agencies do not wish to retain these facilities, BRI will plug and abandon the well, reclaim the surface in the vicinity of the wellhead, and remove the water pipeline. Since the pipeline is located on the ground surface, it will be removed by pulling the pipeline to the vicinity of the storage pond, cutting it into appropriate lengths and removing it from the site by truck. No other reclamation activities are proposed for the pipeline corridor, which follows a pre-law, two-track road that is has been revegetated with volunteer native vegetation. The storage pond will be reclaimed by removing and salvaging the standpipe, emptying the pond of water, removing the liner and placing it in the on-site landfill, backfilling the pond with the surrounding berm material and applying the standard reclamation seed mix. No topsoil was present at the pond site when the pond was excavated; therefore, topsoil will not be placed at this site.

7.3 Roads

As described in Section 4.5, there will be two major categories of roads remaining on the property after completion of mining operations: roads constructed solely for the purpose of mining operations and those roads that were pre-existing county roads. Roads constructed for the purpose of supporting mining operations include waste rock and ore haul roads and roads dedicated to accessing support facilities. Other mining-related roads will be confined to areas that will be disturbed by later, larger-scale mining

TABLE 5.1.2 - original version; later replaced in its entirety

Pit Complex or Ancillary Area	Pit Acres	Dump/Backfill Acres	Other
Rainbow	87.0	384.2	included
Roadside/Fluro	77.678.5	363.1296.8	included
Monitor	62.7	206.2205.4	included
South Wind	82.6	164.6	included
Mine Camp	N/A	N/A	
Camp	35.1	61.8	included
Blue Chalk/Section 16	217.2	420.0	included
Sigma Emma/Taurus	71.7	308.8	included
Mine Roads	N/A	N/A	
Total --	633.9634.8	1908.71841.5	

Note: Ore pad space & access roads included. A perimeter 100 feet wide around the pits and dumps is included. This amounts to a total of 340 included acres

5.2 Mining Methods

The mining methods, beginning with economic analysis and open pit and dump design and concluding with reclamation are very similar to existing operations as described in sections 4.3.3 through 4.3.8 above and are further described as follows:

5.2.1 Economic Analysis

Computer software will calculate the optimum open pit solution for maximum resource recovery on each ore body by means of a modified Lerch-Grossman algorithm. Economic and physical parameters will be periodically customized to best represent each trend. The resultant ultimate pit shells will be the basis for determining economic ore reserves.

top rounding reduces the visual sharpness of the dump crest, resulting in better blending with neighboring terrain. In addition, the former practice of placing runoff control berms on the dump-top margins has been eliminated. As a result, accumulation of runoff on the dump top, which in the past has lead to rapid erosion events on the dump outslopes (blow-outs) and consequential rilling and gullying, is much less likely to occur.

Surface contouring of dump tops consists of subtle re-contouring to create an undulating, as opposed to flat, dump surface. This is accomplished by selected placement of final loads of non-tuffaceous overburden on dump surfaces (plug dumping) followed by smoothing with a dozer prior to topsoil placement. This surface recontouring helps the reclaimed dump surfaces to blend visually with the surrounding terrain by eliminating the highly visible horizontal surfaces that characterize waste rock dump surfaces that are not re-contoured.

The Company's experience in developing and reclaiming waste rock dumps over the last 20 years has shown that waste rock outslopes placed at the natural angle of repose result in a stable configuration and present little safety hazard. A request for a variance from rule R647-4-111.6 is presented in section 8.1.

When available, salvaged topsoils will be pushed over the dump outslopes from the dump-top margins. In addition to serving as a revegetation medium, the placement of soil on the dump outslopes has the effect of "softening" the visual appearance of the outslopes when viewed from a distance, resulting in a slope that blends into the terrain more so than do the coarser, lighter-colored rhyolite-covered outslopes.

7.4.3 Mine Camp, Landfill, Topsoil and Ore Stockpiles, and Related Facilities

Minimal regrading is expected to be required for these facilities and components. After all facilities are removed, remaining cut-and-fill excavations, if any, will be regraded to blend with the adjacent terrain. Such cuts/fills will be of small amplitude and any regrading conducted will result in low-angle, stable slopes.

The landfill is located on a previously variances portion of the Roadside Fluro mine waste rock dump (Plates 4, 5, and 11). It will be reclaimed after mining has been completed at the property. During the final phase of development of the Roadside Fluro pit and dump complex, appropriate quantities of waste rock for cover material and soil growth medium recovered during this development will be stockpiled adjacent to the landfill for use in landfill reclamation. The initial step in landfill closure/reclamation will be grading the area of the landfill to blend with the surrounding dump surface. Then the landfill surface will be covered with at least five feet of waste rock followed by a six-inch soil layer. Revegetation and related reclamation steps will conform to the reclamation performed on the surrounding waste rock dump.

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After stockpiled topsoil has been replaced during reclamation, topsoil stockpile sites will be ripped to a depth of approximately 12 inches and seeded using the standard reclamation seed mix

7.5 Drainage & Sediment Control

Refer to the discussion of drainage and sediment control in sections 3.6, 4.8, 5.7, and 6.4.

Deleted: The reclamation and sediment control features that are created during mining operations, which consist of drainage-impounding waste rock dumps and permanent drainage diversions established by placement of waste rock dumps, are intended to be permanent features and will not be removed during reclamation.

7.6 Test Plot and Past Reclamation Results & Implications for Revegetation

7.6.1 Summary of Results

Documentation of BRI's test plot program began in 1992. Since that time, BRI has prepared and submitted summary annual reports to the Division that have described reclamation activities and notable test plot results during each year. Appendix 4 contains a Summary of Annual Reports to DOGM, prepared by BRI in 2003. The information in this summary reflects the experimental approach taken in the test plot program and in some of the reclamation efforts. Early during the reporting period (1992 – 1995) inorganic fertilizer, variously described as mono-ammonium phosphate (16-20-0) or simply "fertilizer" was used. The 1993 annual report states that the mono-ammonium phosphate was a "big player in getting young plants established." This report further stated that a combination of super-phosphate, urea, gypsum, and mulch produced no better results in test plots than did the mono-ammonium phosphate.

The ability to assess the relative success of past soil amendment efforts is limited by documentation of vegetative success subsequent to the various, different approaches. In addition, almost no data on soil quality has been collected. This overall lack of quantitative information for past reclamation activities prevents an objective assessment of the effectiveness of these efforts. For these reasons, BRI intends to conduct a systematic, quantitative assessment of future revegetative success using both soil analysis and quantitative vegetative monitoring. Accordingly, the soil amendment program described in section 7.9 is flexible.

7.7 Soils Redistribution and Seedbed Preparation

Stockpiled topsoil will be replaced in layers of three to six inches. In most cases, scrapers will be used to place the topsoil; however, haul trucks may be used in some cases, as appropriate. After topsoil placement, compacted surfaces will be ripped to an approximate depth of 18 inches with the rip path spaced approximately 36 inches apart. This creates a deep seedbed and causes the topsoil to filter into the underlying, ripped material.

7.8 Topsoil Availability

BRI plans to use currently stockpiled topsoil first for reclamation at the Fluro, Rainbow, and Monitor Phase I LMU developments. Current stockpiled topsoil totals approximately 39,700 cubic yards divided among four separate stockpiles. Approximately 10,800 cubic yards are located in two stockpiles of 500 and 10,300 cubic yards located at the Roadside Fluro and Blue Chalk areas, respectively. This topsoil is located sufficiently close to the Fluro and Rainbow Phase I LMU developments to enable these soils to be used for reclamation at these two areas. The remainder of the currently stockpiled topsoil is located in the Monitor area and will remain in stockpile until subsequent phases of mine development because no reclamation will occur at Monitor during LMU Phase I.

As described in Table 5.6-1, total topsoil to be salvaged during LMU Phase I is estimated to be approximately 48,105 cubic yards. Of course, all salvageable topsoil of suitable quality will be recovered; the estimated recoverable soil volumes shown in Table 5.6-1 are somewhat conservative.

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